GenCore version 4.5

OM protein - protein search, using sw model

Run on: January 7, 2002, 16:05:26 ; Search time 77.81 Seconds
(without alignments)
22.618 Million cell updates/sec

Title: US-08-569-749-10
Perfect score: 294
Sequence: 1 PEQLASAGFYYVGNSDDVKC.....CWESGDDPWVQHAKWFPRCE 48

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 100059 seqs, 36664827 residues

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	294	100.0	604	1	BIR2_HUMAN	Q13489 homo sapien
2	283	96.3	358	1	PIAP_PIG	O62640 sus scrofa
3	282	95.9	618	1	BIR3_HUMAN	Q13490 homo sapien
4	277	94.2	611	1	BIR_CHICK	Q90660 gallus gall
5	269	91.5	600	1	BIR2_MOUSE	O08863 mus musculu
6	269	91.5	612	1	BIR3_MOUSE	Q62210 mus musculu
7	200	68.0	268	1	IAP3_NPVOP	P41437 orgyia pseu
8	185	62.9	275	1	IAP_GVCP	P41436 cydia pomon
9	181	61.6	1403	1	BIRF_MOUSE	Q9jib6 mus musculu
10	180	61.2	1402	1	BIRG_MOUSE	Q9jib3 mus musculu
11	180	61.2	1403	1	BIRA_MOUSE	Q9qwk5 mus musculu
12	180	61.2	1403	1	BIRE_MOUSE	Q9r016 mus musculu
13	177	60.2	496	1	BIR4_MOUSE	Q60989 mus musculu
14	177	60.2	496	1	BIR4_RAT	Q9r016 rattus norv
15	177	60.2	497	1	BIR4_HUMAN	P98170 homo sapien
16	177	60.2	1447	1	BIRB_MOUSE	Q9quk4 mus musculu
17	173	58.8	1403	1	BIR1_HUMAN	Q13075 homo sapien
18	163	55.4	438	1	IAP1_DROME	Q24306 drosophila
19	153	52.0	498	1	IAP2_DROME	Q24307 drosophila
20	116.5	39.6	4829	1	BIR6_HUMAN	Q9nr09 homo sapien
21	114	38.8	286	1	IAP1_NPVAC	P41435 autographa
22	111	37.8	275	1	IAP1_NPVOP	O10296 orgyia pseu
23	107	36.4	239	1	ZFP_IRV6	P47732 chilo iride
24	101	34.4	997	1	BIR1_SCHPO	O14064 schizosacch
25	88.5	30.1	140	1	BIR5_MOUSE	O70201 mus musculu
26	88.5	30.1	142	1	BIR5_RAT	Q9jhy7 rattus norv
27	85.5	29.1	142	1	BIR5_HUMAN	O15392 homo sapien
28	68.5	23.3	224	1	IAPL_ASFB7	Q65138 african swi
29	66.5	22.6	224	1	IAPL_ASFM1	O11452 african swi
30	62.5	21.3	224	1	IAPL_ASFC3	O11451 african swi
31	62.5	21.3	224	1	IAPL_ASFCH	O12407 african swi
32	62.5	21.3	238	1	IAPL_ASFM2	O11453 african swi
33	59.5	20.2	555	1	HYDL_STRHA	Q05355 streptomyce
34	58.5	19.9	844	1	PBPB_ECOLI	P02919 e penicilli
35	58.5	19.9	1173	1	TSP1_XENLA	P35448 xenopus lae
36	57	19.4	1004	1	PO11_SCICO	Q03277 sciara copr
37	56.5	19.2	114	1	IBB2_PEA	Q41066 pisum sativ
38	56.5	19.2	156	1	80DP_HUMAN	P36639 homo sapien
39	56.5	19.2	249	1	IAP2_NPVAC	P41454 autographa
40	56	19.0	65	1	MTB_STRPU	Q27287 strongyloce
41	55	18.7	361	1	VPI_BPMU	Q01267 bacteriopha
42	54.5	18.5	1170	1	TSP1_BOVIN	Q28178 bos taurus
43	54.5	18.5	1170	1	TSP1_HUMAN	P07996 homo sapien
44	54.5	18.5	1170	1	TSP1_MOUSE	P35441 mus musculu
45	54	18.4	64	1	MTA_STRPU	P04734 strongyloce

ALIGNMENTS

```
RESULT   1
BIR2_HUMAN
ID   BIR2_HUMAN     STANDARD;      PRT;   604 AA.
AC   Q13489; Q16628; Q9UP46;
DT   01-NOV-1997 (Rel. 35, Created)
DT   01-NOV-1997 (Rel. 35, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1 (INHIBITOR OF APOPTOSIS
DE   PROTEIN 1) (HIAP1) (HIAP-1) (C-IAP2) (TNFR2-TRAF SIGNALING COMPLEX
DE   PROTEIN 1) (IAP HOMOLOG C).
GN   BIRC2 OR API1 OR IAP1 OR MIHC.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=96128127; PubMed=8548810;
RA   Rothe M., Pan M.-G., Henzel W.J., Ayres T.M., Goeddel D.V.;
RT   "The TNFR2-TRAF signaling complex contains two novel proteins related
RT   to baculoviral inhibitor of apoptosis proteins.";
RL   Cell 83:1243-1252(1995).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Liver;
RX   MEDLINE=96149249; PubMed=8552191;
RA   Liston P., Roy N., Tamai K., Lefebvre C., Baird S., Cherton-Horvat G.,
RA   Farahani R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;
RT   "Suppression of apoptosis in mammalian cells by NAIP and a related
RT   family of IAP genes.";
RL   Nature 379:349-353(1996).
RN   [3]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Fetal liver;
RX   MEDLINE=96209843; PubMed=8643514;
RA   Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.;
RT   "Cloning and expression of apoptosis inhibitory protein homologs that
RT   function to inhibit apoptosis and/or bind tumor necrosis factor
RT   receptor-associated factors.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
RN   [4]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=99252096; PubMed=10233894;
RA   Horrevoets A.J., Fontijn R.D., van Zonneveld A.J., de Vries C.J.,
RA   ten Cate J.W., Pannekoek H.;
RT   "Vascular endothelial genes that are responsive to tumor necrosis
RT   factor-alpha in vitro are expressed in atherosclerotic lesions,
RT   including inhibitor of apoptosis protein-1, stannin, and two novel
RT   genes.";
RL   Blood 93:3418-3431(1999).
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS
CC       WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO
CC       FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR
CC       NECROSIS FACTOR RECEPTOR 2 (TNFR2).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
CC   -!- TISSUE SPECIFICITY: HIGHLY EXPRESSED IN FETAL LUNG, AND KIDNEY. IN
```

```
CC       THE ADULT, EXPRESSION IS MAINLY SEEN IN LYMPHOID TISSUES,
CC       INCLUDING SPLEEN, THYMUS AND PERIPHERAL BLOOD LYMPHOCYTES.
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; L49432; AAC41943.1; -.
DR   EMBL; U45878; AAC50371.1; -.
DR   EMBL; U37546; AAC50507.1; -.
DR   EMBL; AF070674; AAC83232.1; -.
DR   MIM; 601712; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001315; CARD.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00619; CARD; 1.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00114; CARD; 1.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
DR   PROSITE; PS50209; CARD; 1.
KW   Apoptosis; Zinc-finger; Repeat.
FT   REPEAT       29     96       BIR 1.
FT   REPEAT      169    235       BIR 2.
FT   REPEAT      255    322       BIR 3.
FT   DOMAIN      447    525       CARD.
FT   ZN_FING     557    591       RING-TYPE.
FT   CONFLICT     18     18       N -> Y (IN REF. 4).
FT   CONFLICT    119    119       N -> H (IN REF. 2).
FT   CONFLICT    153    153       D -> E (IN REF. 2).
FT   CONFLICT    163    163       H -> P (IN REF. 2).
FT   CONFLICT    165    165       A -> P (IN REF. 2).
FT   CONFLICT    191    191       K -> R (IN REF. 2).
FT   CONFLICT    364    364       F -> L (IN REF. 2).
FT   CONFLICT    552    552       Q -> P (IN REF. 2).
SQ   SEQUENCE   604 AA;  68371 MW;  8581A00BA9AAB4A7 CRC64;


  Query Match             100.0%;  Score 294;  DB 1;  Length 604;
  Best Local Similarity   100.0%;  Pred. No. 1.9e-28;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           ||||||||||||||||||||||||||||||||||||||||||||||||
Db     273 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 320


RESULT   2
PIAP_PIG
ID   PIAP_PIG       STANDARD;      PRT;   358 AA.
AC   O62640;
DT   15-DEC-1998 (Rel. 37, Created)
DT   15-DEC-1998 (Rel. 37, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   PUTATIVE INHIBITOR OF APOPTOSIS.
GN   PIAP.
OS   Sus scrofa (Pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX   NCBI_TaxID=9823;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Aorta;
RX   MEDLINE=98162622; PubMed=9501011;
RA   Stehlik C., de Martin R., Binder B.R., Lipp J.;
RT   "Cytokine induced expression of porcine inhibitor of apoptosis
RT   protein (iap) family member is regulated by NF-kappa B.";
RL   Biochem. Biophys. Res. Commun. 243:827-832(1998).
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 2 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U79142; AAC39171.1; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001315; CARD.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 2.
DR   Pfam; PF00619; CARD; 1.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 2.
DR   SMART; SM00114; CARD; 1.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 2.
DR   PROSITE; PS50143; BIR_REPEAT_2; 2.
DR   PROSITE; PS50209; CARD; 1.
KW   Apoptosis; Zinc-finger; Repeat.
FT   REPEAT       4     70       BIR 1.
FT   REPEAT      90    157       BIR 2.
FT   ZN_FING    311    345       RING-TYPE.
SQ   SEQUENCE   358 AA;  40977 MW;  EB2268FA9A6190A4 CRC64;


  Query Match             96.3%;  Score 283;  DB 1;  Length 358;
  Best Local Similarity   93.8%;  Pred. No. 2.5e-27;
  Matches   45;  Conservative    3;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           ||||||||||:|:|||||||||||||||||||||||||:|||||||||
Db     108 PEQLASAGFYYMGHSDDVKCFCCDGGLRCWESGDDPWVEHAKWFPRCE 155


RESULT   3
BIR3_HUMAN
ID   BIR3_HUMAN     STANDARD;      PRT;   618 AA.
AC   Q13490; Q16516;
DT   01-NOV-1997 (Rel. 35, Created)
DT   01-NOV-1997 (Rel. 35, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 3 (INHIBITOR OF APOPTOSIS
DE   PROTEIN 2) (HIAP2) (HIAP-2) (C-IAP1) (TNFR2-TRAF SIGNALING COMPLEX
DE   PROTEIN 2) (IAP HOMOLOG B).
GN   BIRC3 OR API2 OR IAP2 OR MIHB.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=96128127; PubMed=8548810;
RA   Rothe M., Pan M.-G., Henzel W.J., Ayres T.M., Goeddel D.V.;
RT   "The TNFR2-TRAF signaling complex contains two novel proteins related
RT   to baculoviral inhibitor of apoptosis proteins.";
RL   Cell 83:1243-1252(1995).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Liver;
```

```
RX   MEDLINE=96149249; PubMed=8552191;
RA   Liston P., Roy N., Tamai K., Lefebvre C., Baird S., Cherton-Horvat G.,
RA   Farahani R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;
RT   "Suppression of apoptosis in mammalian cells by NAIP and a related
RT   family of IAP genes.";
RL   Nature 379:349-353(1996).
RN   [3]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Fetal liver;
RX   MEDLINE=96209843; PubMed=8643514;
RA   Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.;
RT   "Cloning and expression of apoptosis inhibitory protein homologs that
RT   function to inhibit apoptosis and/or bind tumor necrosis factor
RT   receptor-associated factors.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
RN   [4]
RP   STRUCTURE BY NMR OF 266-363.
RX   MEDLINE=99332054; PubMed=10404221;
RA   Hinds M.G., Norton R.S., Vaux D.L., Day C.L.;
RT   "Solution structure of a baculoviral inhibitor of apoptosis (IAP)
RT   repeat.";
RL   Nat. Struct. Biol. 6:648-651(1999).
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS
CC       WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO
CC       FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR
CC       NECROSIS FACTOR RECEPTOR 2 (TNFR2).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
CC   -!- TISSUE SPECIFICITY: PRESENT IN MANY FETAL AND ADULT TISSUES.
CC       MAINLY EXPRESSED IN ADULT SKELETAL MUSCLE, THYMUS, TESTIS, OVARY,
CC       AND PANCREAS, LOW OR ABSENT IN BRAIN AND PERIPHERAL BLOOD
CC       LEUKOCYTES.
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------------
DR   EMBL; L49431; AAC41942.1; -.
DR   EMBL; U45879; AAC50372.1; -.
DR   EMBL; U37547; AAC50508.1; -.
DR   PDB; 1QBH; 20-OCT-99.
DR   MIM; 601721; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001315; CARD.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00619; CARD; 1.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00114; CARD; 1.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
DR   PROSITE; PS50209; CARD; 1.
KW   Apoptosis; Zinc-finger; Repeat; 3D-structure.
FT   REPEAT       46    113       BIR 1.
FT   REPEAT      184    250       BIR 2.
FT   REPEAT      269    336       BIR 3.
FT   DOMAIN      453    539       CARD.
FT   ZN_FING     571    605       RING-TYPE.
FT   CONFLICT    157    157       S -> P (IN REF. 2).
FT   CONFLICT    308    308       C -> G (IN REF. 2).
FT   CONFLICT    414    414       Q -> L (IN REF. 2).
FT   CONFLICT    514    514       L -> W (IN REF. 2).
SQ   SEQUENCE   618 AA;  69899 MW;  C1778D328063586D CRC64;
```

```
  Query Match             95.9%;  Score 282;  DB 1;  Length 618;
  Best Local Similarity   93.8%;  Pred. No. 5.5e-27;
  Matches   45;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           |||||||||||| :|||||||||||||||||||||:|||||||||
Db     287 PEQLASAGFYYVGRNDDVKCFCCDGGLRCWESGDDPWVEHAKWFPRCE 334


RESULT   4
BIR_CHICK
ID   BIR_CHICK      STANDARD;      PRT;   611 AA.
AC   Q90660;
DT   01-NOV-1997 (Rel. 35, Created)
DT   01-NOV-1997 (Rel. 35, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   INHIBITOR OF APOPTOSIS PROTEIN (IAP) (INHIBITOR OF T CELL APOPTOSIS
DE   PROTEIN).
GN   ITA.
OS   Gallus gallus (Chicken).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Spleen;
RX   MEDLINE=97101112; PubMed=8945639;
RA   Digby M.R., Kimpton W.G., York J.J., Connick T.E., Lowenthal J.W.;
RT   "ITA, a vertebrate homologue of IAP that is expressed in T
RT   lymphocytes.";
RL   DNA Cell Biol. 15:981-988(1996).
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR (BY SIMILARITY).
CC   -!- SUBCELLULAR LOCATION: PREDOMINANTLY NUCLEAR.
CC   -!- TISSUE SPECIFICITY: CELLS OF THE T LYMPHOCYTE LINEAGE. FOUND IN
CC       BOTH CORTICAL AND MEDULLARY CELLS OF THE THYMUS.
CC   -!- DEVELOPMENTAL STAGE: HIGH LEVELS ARE INDUCED WITHIN 4-8 HOURS OF
CC       T-CELL ACTIVATION IN SPLEEN AND THYMUS.
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------------
DR   EMBL; U27466; AAB48118.1; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001315; CARD.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00619; CARD; 1.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00114; CARD; 1.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
DR   PROSITE; PS50209; CARD; 1.
KW   Apoptosis; Zinc-finger; Repeat; Nuclear protein.
FT   REPEAT       30     97       BIR 1.
FT   REPEAT      176    242       BIR 2.
FT   REPEAT      262    329       BIR 3.
FT   ZN_FING     564    598       RING-TYPE.
SQ   SEQUENCE   611 AA;  69009 MW;  53FC9136F34EBDDD CRC64;
```

```
  Query Match           94.2%;  Score 277;  DB 1;  Length 611;
  Best Local Similarity  89.6%;  Pred. No. 2.2e-26;
  Matches   43;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           ||||| ||||||| :|||||||||||||||||||||::|||||||||
Db     280 PEQLADAGFYYVGRNDDVKCFCCDGGLRCWESGDDPWIEHAKWFPRCE 327


RESULT   5
BIR2_MOUSE
ID   BIR2_MOUSE     STANDARD;      PRT;   600 AA.
AC   O08863;
DT   01-NOV-1997 (Rel. 35, Created)
DT   01-NOV-1997 (Rel. 35, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 2 (INHIBITOR OF APOPTOSIS
DE   PROTEIN 1) (MIAP1) (MIAP-1).
GN   BIRC2 OR API1 OR IAP1.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Skeletal muscle;
RX   MEDLINE=98110590; PubMed=9441758;
RA   Liston P., Lefebvre C., Fong W.G., Xuan J.Y., Korneluk R.G.;
RT   "Genomic characterization of the mouse inhibitor of apoptosis protein
RT   1 and 2 genes.";
RL   Genomics 46:495-503(1997).
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS
CC       WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO
CC       FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR
CC       NECROSIS FACTOR RECEPTOR 2 (TNFR2) (BY SIMILARITY).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U88908; AAC53531.1; -.
DR   MGD; MGI:1197007; Birc2.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001315; CARD.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00619; CARD; 1.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00114; CARD; 1.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
DR   PROSITE; PS50209; CARD; 1.
KW   Apoptosis; Zinc-finger; Repeat.
FT   REPEAT       27     94       BIR 1.
FT   REPEAT      167    233       BIR 2.
FT   REPEAT      253    320       BIR 3.
FT   DOMAIN      444    512       CARD.
FT   ZN_FING     553    587       RING-TYPE.
SQ   SEQUENCE   600 AA;  67198 MW;  AD7F73E6849317D1 CRC64;


  Query Match           91.5%;  Score 269;  DB 1;  Length 600;
  Best Local Similarity  89.4%;  Pred. No. 2e-25;
  Matches   42;  Conservative    4;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 EQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           ::|||||||| |:|||||||||||||||||||||||:|||||||||
Db     272 QELASAGFYYTGHSDDVKCFCCDGGLRCWESGDDPWVEHAKWFPRCE 318


RESULT   6
BIR3_MOUSE
ID   BIR3_MOUSE     STANDARD;      PRT;   612 AA.
AC   Q62210; O08864;
DT   01-NOV-1997 (Rel. 35, Created)
DT   01-NOV-1997 (Rel. 35, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 3 (INHIBITOR OF APOPTOSIS
DE   PROTEIN 2) (MIAP2) (MIAP-2).
GN   BIRC3 OR API2 OR IAP2.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RX   MEDLINE=96128127; PubMed=8548810;
RA   Rothe M., Pan M.-G., Henzel W.J., Ayres T.M., Goeddel D.V.;
RT   "The TNFR2-TRAF signaling complex contains two novel proteins related
RT   to baculoviral inhibitor of apoptosis proteins.";
RL   Cell 83:1243-1252(1995).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Skeletal muscle;
RX   MEDLINE=98110590; PubMed=9441758;
RA   Liston P., Lefebvre C., Fong W.G., Xuan J.Y., Korneluk R.G.;
RT   "Genomic characterization of the mouse inhibitor of apoptosis protein
RT   1 and 2 genes.";
RL   Genomics 46:495-503(1997).
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS
CC       WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO
CC       FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR
CC       NECROSIS FACTOR RECEPTOR 2 (TNFR2).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
CC   -!- TISSUE SPECIFICITY: EXPRESSED IN HEART, BRAIN, SPLEEN, LUNG,
CC       LIVER, SKELETAL MUSCLE, KIDNEY, AND TESTIS.
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; L49433; AAC42078.1; -.
DR   EMBL; U88909; AAC53532.1; -.
DR   MGD; MGI:1197009; Birc3.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001315; CARD.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00619; CARD; 1.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00114; CARD; 1.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
DR   PROSITE; PS50209; CARD; 1.
KW   Apoptosis; Zinc-finger; Repeat.
```

```
FT   REPEAT       46    113       BIR 1.
FT   REPEAT      177    243       BIR 2.
FT   REPEAT      262    329       BIR 3.
FT   DOMAIN      447    533       CARD.
FT   ZN_FING     565    599       RING-TYPE.
FT   CONFLICT    380    380       E -> K (IN REF. 2).
SQ   SEQUENCE   612 AA;  69676 MW;  E08969D93C6C610D CRC64;


  Query Match             91.5%;  Score 269;  DB 1;  Length 612;
  Best Local Similarity   87.5%;  Pred. No. 2.1e-25;
  Matches   42;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           ||||||||||||  :|||||||||||||||| |||||::|||||||||
Db     280 PEQLASAGFYYVDRNDDVKCFCCDGGLRCWEPGDDPWIEHAKWFPRCE 327


RESULT   7
IAP3_NPVOP
ID   IAP3_NPVOP     STANDARD;      PRT;   268 AA.
AC   P41437;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   APOPTOSIS INHIBITOR 3 (IAP-3).
GN   IAP3 OR IAP.
OS   Orgyia pseudotsugata multicapsid polyhedrosis virus (OpMNPV).
OC   Viruses; dsDNA viruses, no RNA stage; Baculoviridae;
OC   Nucleopolyhedrovirus.
OX   NCBI_TaxID=164623;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=94187094; PubMed=8139034;
RA   Birnbaum M.J., Clem R.J., Miller L.K.;
RT   "An apoptosis-inhibiting gene from a nuclear polyhedrosis virus
RT   encoding a polypeptide with Cys/His sequence motifs.";
RL   J. Virol. 68:2521-2528(1994).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=97271300; PubMed=9126251;
RA   Ahrens C.H., Russell R.R., Funk C.J., Evans J., Harwood S.,
RA   Rohrmann G.F.;
RT   "The sequence of the Orgyia pseudotsugata multinucleocapsid nuclear
RT   polyhedrosis virus genome.";
RL   Virology 229:381-399(1997).
CC   -!- FUNCTION: ACTS BY BLOCKING CELLULAR APOPTOSIS RATHER THAN BY
CC       PREVENTING VIRAL STIMULATION OF APOPTOSIS.
CC   -!- SIMILARITY: CONTAINS 2 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between  the Swiss Institute of Bioinformatics  and the  EMBL outstation -
CC   the European Bioinformatics Institute.  There are no  restrictions on  its
CC   use  by  non-profit  institutions as long  as its content  is  in  no  way
CC   modified and this statement is not removed.  Usage  by  and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; L22564; AAB02610.1; -.
DR   EMBL; U75930; AAC59034.1; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 2.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 2.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 2.
DR   PROSITE; PS50143; BIR_REPEAT_2; 2.
KW   Apoptosis; Zinc-finger; Repeat.
FT   REPEAT       18     84       BIR 1.
FT   REPEAT      111    178       BIR 2.
FT   ZN_FING     221    255       RING-TYPE.
SQ   SEQUENCE   268 AA;  30076 MW;  DF89175FDE85A708 CRC64;


  Query Match             68.0%;  Score 200;  DB 1;  Length 268;
  Best Local Similarity   62.5%;  Pred. No. 2.3e-17;
  Matches   30;  Conservative    6;  Mismatches   12;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           ||:|| |||:| |  |  :|||||||: ||  | || |||:|: |||
Db     129 PEELAEAGFFYTGQGDKTRCFCCDGGLKDWEPDDAPWQQHARWYDRCE 176


RESULT   8
IAP_GVCP
ID   IAP_GVCP       STANDARD;      PRT;   275 AA.
AC   P41436;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   APOPTOSIS INHIBITOR IAP.
GN   IAP.
OS   Cydia pomonella granulosis virus (CpGV) (Cydia pomonella
OS   granulovirus).
OC   Viruses; dsDNA viruses, no RNA stage; Baculoviridae; Granulovirus.
OX   NCBI_TaxID=28289;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=M1;
RX   MEDLINE=93188168; PubMed=8445726;
RA   Crook N.E., Clem R.J., Miller L.K.;
RT   "An apoptosis-inhibiting baculovirus gene with a zinc finger-like
RT   motif.";
RL   J. Virol. 67:2168-2174(1993).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=MEXICAN;
RA   Kang W.K., Crook N.E., Winstanley D., O'Reilly D.R.;
RL   Submitted (DEC-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: ACTS BY BLOCKING CELLULAR APOPTOSIS RATHER THAN BY
CC       PREVENTING VIRAL STIMULATION OF APOPTOSIS.
CC   -!- SIMILARITY: CONTAINS 2 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between  the Swiss Institute of Bioinformatics  and the  EMBL outstation -
CC   the European Bioinformatics Institute.  There are no  restrictions on  its
CC   use  by  non-profit  institutions as long  as its content  is  in  no  way
CC   modified and this statement is not removed.  Usage  by  and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; L05494; AAA43835.1; -.
DR   EMBL; U53466; AAB39098.1; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 2.
DR   SMART; SM00238; BIR; 2.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 2.
DR   PROSITE; PS50143; BIR_REPEAT_2; 2.
KW   Apoptosis; Zinc-finger; Repeat.
FT   REPEAT       7     73       BIR 1.
FT   REPEAT     108    175       BIR 2.
FT   ZN_FING    228    262       RING-TYPE.
SQ   SEQUENCE   275 AA;  31290 MW;  84605448869CAD60 CRC64;


  Query Match             62.9%;  Score 185;  DB 1;  Length 275;
  Best Local Similarity   61.7%;  Pred. No. 1.6e-15;
  Matches   29;  Conservative    5;  Mismatches   13;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRC 47
           |||:| |||:| |  |: ||| ||||| || | || || :|| ||
```

```
Db    126 PEQMADAGFFYTGYGDNTKCFYCDGGLKDWEPEDVPWEQHVRWFDRC 172


RESULT  9
BIRF_MOUSE
ID   BIRF_MOUSE     STANDARD;      PRT;  1403 AA.
AC   Q9JIB6; P81704; O09122; O09121;
DT   20-AUG-2001 (Rel. 40, Created)
DT   20-AUG-2001 (Rel. 40, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1F (NEURONAL APOPTOSIS
DE   INHIBITORY PROTEIN 6).
GN   BIRC1F OR NAIP6 OR NAIP-RS4.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=20414747; PubMed=10958627;
RA   Endrizzi M.G., Hadinoto V., Growney J.D., Miller W., Dietrich W.F.;
RT   "Genomic sequence analysis of the mouse Naip gene array.";
RL   Genome Res. 10:1095-1102(2000).
RN   [2]
RP   SEQUENCE OF 82-168 FROM N.A.
RC   STRAIN=129/SVJ;
RX   MEDLINE=97131520; PubMed=8975718;
RA   Scharf J.M., Damron D., Frisella A., Bruno S., Beggs A.H.,
RA   Kunkel L.M., Dietrich W.F.;
RT   "The mouse region syntenic for human spinal muscular atrophy lies
RT   within the Lgnl critical interval and contains multiple copies of Naip
RT   exon 5.";
RL   Genomics 38:405-417(1996).
CC   -!- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC       SIGNALS.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF242431; AAF82751.1; -.
DR   EMBL; U66327; AAC52975.1; -.
DR   MGD; MGI:1298222; Birc1f.
DR   InterPro; IPR001370; BIR.
DR   Pfam; PF00653; BIR; 3.
DR   SMART; SM00238; BIR; 3.
DR   PROSITE; PS01282; BIR_REPEAT_1; 2.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
KW   Apoptosis; Repeat; Multigene family.
FT   REPEAT       60    127       BIR 1.
FT   REPEAT      159    227       BIR 2.
FT   REPEAT      278    345       BIR 3.
SQ   SEQUENCE   1403 AA;  159823 MW;  9D4912503358C4E9 CRC64;


  Query Match           61.6%;  Score 181;  DB 1;  Length 1403;
  Best Local Similarity  58.3%;  Pred. No. 2.2e-14;
  Matches   28;  Conservative    6;  Mismatches   14;  Indels    0;  Gaps    0;

Qy      1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
          |  |::||| : |  | |:|| | | |  || ||||| :|||||||:||
Db    178 PRALSAAGFVFTGKRDTVQCFSCGGSLGNWEEGDDPWKEHAKWFPKCE 225


RESULT  10
BIRG_MOUSE
ID   BIRG_MOUSE     STANDARD;      PRT;  1402 AA.
AC   Q9JIB3;
DT   20-AUG-2001 (Rel. 40, Created)
DT   20-AUG-2001 (Rel. 40, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1G (NEURONAL APOPTOSIS
DE   INHIBITORY PROTEIN 7).
GN   BIRC1G OR NAIP7.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=20414747; PubMed=10958627;
RA   Endrizzi M.G., Hadinoto V., Growney J.D., Miller W., Dietrich W.F.;
RT   "Genomic sequence analysis of the mouse Naip gene array.";
RL   Genome Res. 10:1095-1102(2000).
CC   -!- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC       SIGNALS.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF242433; AAF82749.1; -.
DR   MGD; MGI:1858256; Birc1g.
DR   InterPro; IPR001370; BIR.
DR   Pfam; PF00653; BIR; 3.
DR   SMART; SM00238; BIR; 3.
DR   PROSITE; PS01282; BIR_REPEAT_1; 2.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
KW   Apoptosis; Repeat; Multigene family.
FT   REPEAT       60    127       BIR 1.
FT   REPEAT      159    227       BIR 2.
FT   REPEAT      278    345       BIR 3.
SQ   SEQUENCE   1402 AA;  159662 MW;  C1DFFBA359893E0D CRC64;


  Query Match           61.2%;  Score 180;  DB 1;  Length 1402;
  Best Local Similarity  58.3%;  Pred. No. 2.9e-14;
  Matches   28;  Conservative    6;  Mismatches   14;  Indels    0;  Gaps    0;

Qy      1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
          |  |::||| : |  | |:|| | | |  || ||||| :|||||||:||
Db    178 PRVLSAAGFVFTGKRDTVQCFSCGGSLGNWEEGDDPWKEHAKWFPKCE 225


RESULT  11
BIRA_MOUSE
ID   BIRA_MOUSE     STANDARD;      PRT;  1403 AA.
AC   Q9QWK5; Q9R017; Q9JIB5;
DT   20-AUG-2001 (Rel. 40, Created)
DT   20-AUG-2001 (Rel. 40, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1A (NEURONAL APOPTOSIS
DE   INHIBITORY PROTEIN 1).
GN   BIRC1A OR NAIP1 OR NAIP.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Yaraghi Z., Korneluk R.G., MacKenzie A.E.;
RT   "Cloning and characterization of the multiple copies of the murine
RT   homologue of NAIP (neuronal apoptosis inhibitory protein).";
RL   Submitted (JUN-1997) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
```

```
RX   MEDLINE=99431676; PubMed=10501978;
RA   Huang S., Scharf J.M., Growney J.D., Endrizzi M.G., Dietrich W.F.;
RT   "The mouse Naip gene cluster on Chromosome 13 encodes several distinct
RT   functional transcripts.";
RL   Mamm. Genome 10:1032-1035(1999).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=20414747; PubMed=10958627;
RA   Endrizzi M.G., Hadinoto V., Growney J.D., Miller W., Dietrich W.F.;
RT   "Genomic sequence analysis of the mouse Naip gene array.";
RL   Genome Res. 10:1095-1102(2000).
CC   -!- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC       SIGNALS.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF007769; AAB69223.1; -.
DR   EMBL; AF135491; AAD56763.1; -.
DR   EMBL; AF242432; AAF82752.1; -.
DR   MGD; MGI:1298223; Bircla.
DR   InterPro; IPR001370; BIR.
DR   Pfam; PF00653; BIR; 3.
DR   SMART; SM00238; BIR; 3.
DR   PROSITE; PS01282; BIR_REPEAT_1; 1.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
KW   Apoptosis; Repeat; Multigene family.
FT   REPEAT       60    127       BIR 1.
FT   REPEAT      159    227       BIR 2.
FT   REPEAT      278    345       BIR 3.
FT   CONFLICT    343    343       I -> V (IN REF. 2).
FT   CONFLICT    359    359       L -> Q (IN REF. 2).
FT   CONFLICT    624    624       E -> K (IN REF. 2).
FT   CONFLICT   1092   1092       D -> E (IN REF. 3).
FT   CONFLICT   1116   1116       D -> N (IN REF. 3).
FT   CONFLICT   1123   1123       G -> R (IN REF. 3).
FT   CONFLICT   1129   1129       L -> H (IN REF. 1).
FT   CONFLICT   1140   1140       T -> M (IN REF. 2).
FT   CONFLICT   1269   1269       A -> V (IN REF. 3).
SQ   SEQUENCE   1403 AA;  158692 MW;  B31630259595EE67 CRC64;


  Query Match           61.2%;  Score 180;  DB 1;  Length 1403;
  Best Local Similarity  58.3%;  Pred. No. 2.9e-14;
  Matches   28;  Conservative    6;  Mismatches   14;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           |  |::||| : |  | |:|| | | |  || ||||| :||||||:||
Db     178 PRVLSAAGFVFTGKRDTVQCFSCGGSLGNWEEGDDPWKEHAKWFPKCE 225


RESULT  12
BIRE_MOUSE
ID   BIRE_MOUSE     STANDARD;      PRT;  1403 AA.
AC   Q9R016; Q9R029; P81703; O09122; O09121;
DT   20-AUG-2001 (Rel. 40, Created)
DT   20-AUG-2001 (Rel. 40, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1E (NEURONAL APOPTOSIS
DE   INHIBITORY PROTEIN 5).
GN   BIRC1E OR NAIP5 OR NAIP-RS3.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=99431676; PubMed=10501978;
RA   Huang S., Scharf J.M., Growney J.D., Endrizzi M.G., Dietrich W.F.;
RT   "The mouse Naip gene cluster on Chromosome 13 encodes several distinct
RT   functional transcripts.";
RL   Mamm. Genome 10:1032-1035(1999).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=129/SV;
RX   MEDLINE=99417674; PubMed=10486205;
RA   Endrizzi M., Huang S., Scharf J.M., Kelter A.R., Wirth B.,
RA   Kunkel L.M., Miller W., Dietrich W.F.;
RT   "Comparative sequence analysis of the mouse and human Lgn1/SMA
RT   interval.";
RL   Genomics 60:137-151(1999).
RN   [3]
RP   SEQUENCE OF 82-168 FROM N.A.
RC   STRAIN=129/SVJ;
RX   MEDLINE=97131520; PubMed=8975718;
RA   Scharf J.M., Damron D., Frisella A., Bruno S., Beggs A.H.,
RA   Kunkel L.M., Dietrich W.F.;
RT   "The mouse region syntenic for human spinal muscular atrophy lies
RT   within the Lgn1 critical interval and contains multiple copies of Naip
RT   exon 5.";
RL   Genomics 38:405-417(1996).
CC   -!- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC       SIGNALS.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF135492; AAD56764.1; -.
DR   EMBL; AF131205; AAD56760.1; -.
DR   EMBL; U66326; AAC52974.1; -.
DR   MGD; MGI:1298220; Bircle.
DR   InterPro; IPR001370; BIR.
DR   Pfam; PF00653; BIR; 3.
DR   SMART; SM00238; BIR; 3.
DR   PROSITE; PS01282; BIR_REPEAT_1; 2.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
KW   Apoptosis; Repeat; Multigene family.
FT   REPEAT       60    127       BIR 1.
FT   REPEAT      159    227       BIR 2.
FT   REPEAT      278    345       BIR 3.
FT   CONFLICT     92     92       K -> R (IN REF. 1).
FT   CONFLICT    144    144       S -> R (IN REF. 1).
FT   CONFLICT    242    242       S -> G (IN REF. 2).
FT   CONFLICT    472    472       T -> A (IN REF. 2).
FT   CONFLICT    516    516       A -> D (IN REF. 2).
FT   CONFLICT    521    521       A -> T (IN REF. 2).
FT   CONFLICT    533    533       V -> A (IN REF. 2).
FT   CONFLICT    538    538       S -> I (IN REF. 2).
FT   CONFLICT   1092   1092       E -> D (IN REF. 2).
FT   CONFLICT   1129   1129       H -> L (IN REF. 2).
FT   CONFLICT   1137   1137       R -> Q (IN REF. 2).
FT   CONFLICT   1242   1242       V -> I (IN REF. 2).
FT   CONFLICT   1276   1276       D -> N (IN REF. 2).
SQ   SEQUENCE   1403 AA;  159695 MW;  B27F645043BCEC42 CRC64;


  Query Match           61.2%;  Score 180;  DB 1;  Length 1403;
  Best Local Similarity  58.3%;  Pred. No. 2.9e-14;
  Matches   28;  Conservative    6;  Mismatches   14;  Indels    0;  Gaps    0;

Qy       1 PEQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           |  |::||| : |  | |:|| | | |  || ||||| :||||||:||
Db     178 PRVLSAAGFVFTGKRDTVQCFSCGGSLGNWEEGDDPWKEHAKWFPKCE 225
```

```
RESULT 13
BIR4_MOUSE
ID   BIR4_MOUSE     STANDARD;      PRT;   496 AA.
AC   Q60989; O08865;
DT   01-NOV-1997 (Rel. 35, Created)
DT   01-NOV-1997 (Rel. 35, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
DE   PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
DE   (IAP HOMOLOG A) (MIAP3) (MIAP-3).
GN   BIRC4 OR API3 OR XIAP OR AIPA OR MIHA.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=C57BL/6 X CBA; TISSUE=Liver;
RX   MEDLINE=96209843; PubMed=8643514;
RA   Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.;
RT   "Cloning and expression of apoptosis inhibitory protein homologs that
RT   function to inhibit apoptosis and/or bind tumor necrosis factor
RT   receptor-associated factors.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Farahani R., Lefebvre C., Korneluk R.G., Mackenzie A.E.;
RL   Submitted (JUN-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
CC       CASPASE-7 (BY SIMILARITY).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U36842; AAC52594.1; -.
DR   EMBL; U88990; AAB58376.1; -.
DR   MGD; MGI:107572; Birc4.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
KW   Apoptosis; Zinc-finger; Repeat.
FT   REPEAT       26     93       BIR 1.
FT   REPEAT      163    230       BIR 2.
FT   REPEAT      264    329       BIR 3.
FT   ZN_FING     449    483       RING-TYPE.
FT   CONFLICT    208    208       E -> K (IN REF. 2).
FT   CONFLICT    317    317       E -> D (IN REF. 2).
FT   CONFLICT    322    322       W -> C (IN REF. 2).
FT   CONFLICT    346    346       S -> P (IN REF. 2).
FT   CONFLICT    360    360       S -> P (IN REF. 2).
FT   CONFLICT    388    388       I -> L (IN REF. 2).
FT   CONFLICT    449    449       C -> S (IN REF. 2).
FT   CONFLICT    462    462       V -> F (IN REF. 2).
FT   CONFLICT    468    468       V -> A (IN REF. 2).
FT   CONFLICT    490    490       K -> N (IN REF. 2).
SQ   SEQUENCE   496 AA;  56079 MW;  EC5FAE0799F2CDD8 CRC64;
```

```
  Query Match           60.2%;  Score 177;  DB 1;  Length 496;
  Best Local Similarity  61.7%;  Pred. No. 2.6e-14;
  Matches   29;  Conservative    5;  Mismatches   13;  Indels    0;  Gaps    0;

Qy       2 EQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           |||| |||| :|  | |||| | |||  |:  :||| |||||:| |:
Db     281 EQLARAGFYALGEGDKVKCFHCGGGLTDWKPSEDPWEQHAKWYPGCK 327


RESULT 14
BIR4_RAT
ID   BIR4_RAT       STANDARD;      PRT;   496 AA.
AC   Q9R0I6;
DT   20-AUG-2001 (Rel. 40, Created)
DT   20-AUG-2001 (Rel. 40, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
DE   PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
DE   (IAP HOMOLOG A) (RIAP3) (RIAP-3).
GN   BIRC4 OR API3 OR XIAP.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Saito N.;
RT   "Rattus norvegicus X-linked inhibitor of apoptosis (riap3) mRNA.";
RL   Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
CC       CASPASE-7 (BY SIMILARITY).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AB033366; BAA85304.1; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
KW   Apoptosis; Zinc-finger; Repeat.
FT   REPEAT       26     93       BIR 1.
FT   REPEAT      163    230       BIR 2.
FT   REPEAT      264    329       BIR 3.
FT   ZN_FING     449    483       RING-TYPE.
SQ   SEQUENCE   496 AA;  56072 MW;  E250E3C77461A469 CRC64;


  Query Match           60.2%;  Score 177;  DB 1;  Length 496;
  Best Local Similarity  61.7%;  Pred. No. 2.6e-14;
  Matches   29;  Conservative    5;  Mismatches   13;  Indels    0;  Gaps    0;

Qy       2 EQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           |||| |||| :|  | |||| | |||  |:  :||| |||||:| |:
Db     281 EQLARAGFYALGEGDKVKCFHCGGGLTDWKPSEDPWEQHAKWYPGCK 327


RESULT 15
BIR4_HUMAN
ID   BIR4_HUMAN     STANDARD;      PRT;   497 AA.
```

```
AC   P98170; Q9NQ14;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
DE   PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
DE   (IAP-LIKE PROTEIN) (HILP).
GN   BIRC4 OR API3 OR IAP3 OR XIAP.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Fetal brain;
RX   MEDLINE=96149249; PubMed=8552191;
RA   Liston P., Roy N., Tamai K., Lefebvre C., Baird S., Cherton-Horvat G.,
RA   Farahani R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;
RT   "Suppression of apoptosis in mammalian cells by NAIP and a related
RT   family of IAP genes.";
RL   Nature 379:349-353(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Fetal heart;
RX   MEDLINE=96256286; PubMed=8654366;
RA   Duckett C.S., Nava V.E., Gedrich R.W., Clem R.J., van Dongen J.L.,
RA   Gilfillan M.C., Shiels H., Hardwick J.M., Thompson C.B.;
RT   "A conserved family of cellular genes related to the baculovirus iap
RT   gene and encoding apoptosis inhibitors.";
RL   EMBO J. 15:2685-2694(1996).
RN   [3]
RP   SEQUENCE FROM N.A.
RA   Grafham D.;
RL   Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
RN   [4]
RP   FUNCTION.
RX   MEDLINE=97373959; PubMed=9230442;
RA   Deveraux Q.L., Takahashi R., Salvesen G.S., Reed J.C.;
RT   "X-linked IAP is a direct inhibitor of cell-death proteases.";
RL   Nature 388:300-304(1997).
CC   -!- FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
CC       CASPASE-7.
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- TISSUE SPECIFICITY: UBIQUITOUS, EXCEPT PERIPHERAL BLOOD
CC       LEUKOCYTES.
CC   -!- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC   -!- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC   -!- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U45880; AAC50373.1; -.
DR   EMBL; U32974; AAC50518.1; -.
DR   EMBL; AL121601; CAB95312.1; -.
DR   MIM; 300079; -.
DR   InterPro; IPR001370; BIR.
DR   InterPro; IPR001841; Znf_ring.
DR   Pfam; PF00653; BIR; 3.
DR   Pfam; PF00097; zf-C3HC4; 1.
DR   SMART; SM00238; BIR; 3.
DR   SMART; SM00184; RING; 1.
DR   PROSITE; PS01282; BIR_REPEAT_1; 3.
DR   PROSITE; PS50143; BIR_REPEAT_2; 3.
KW   Apoptosis; Zinc-finger; Repeat; Thiol protease inhibitor.
FT   REPEAT      26     93       BIR 1.
FT   REPEAT     163    230       BIR 2.
FT   REPEAT     265    330       BIR 3.
FT   ZN_FING    450    484       RING-TYPE.
FT   CONFLICT   162    162       S -> C (IN REF. 1).
FT   CONFLICT   423    423       Q -> P (IN REF. 2).
SQ   SEQUENCE   497 AA;  56684 MW;  9D394C16D45EB635 CRC64;


  Query Match             60.2%;  Score 177;  DB 1;  Length 497;
  Best Local Similarity   61.7%;  Pred. No. 2.6e-14;
  Matches   29;  Conservative    5;  Mismatches   13;  Indels    0;  Gaps    0;

Qy       2 EQLASAGFYYVGNSDDVKCFCCDGGLRCWESGDDPWVQHAKWFPRCE 48
           |||| |||| :|  | |||| | |||  |:  :||| |||||:| |:
Db     282 EQLARAGFYALGEGDKVKCFHCGGGLTDWKPSEDPWEQHAKWYPGCK 328


Search completed: January  7, 2002, 16:05:26
Job time: 1405 sec
```